

No.: CEL 038-2020

**Implementation rules for energy efficiency label
of permanent-magnet synchronous motors
永磁同步电动机能源效率标识实施规则**

Contents

1	General.....	1
2	Pattern and specification of labels	1
3	Energy efficiency testing	3
4	Determination of label information	3
5	Printing, application and display of labels	4
6	Recording of labels	5
7	Announcement of labels.....	7
	Annex 1 Examples for patterns of energy efficiency label of permanent-magnet synchronous motor	9
	Annex 2 Testing report on energy efficiency of permanent-magnet synchronous motors	13
	Annex 3 Record form of energy efficiency label of permanent-magnet synchronous motor	20

1 General

1.1 This Rules is formulated according to the *Measures for Administration of Energy Efficiency Labels* (hereinafter referred to as "the Measures")

1.2 The Rules is applicable to the application, recording and announcement of the energy efficiency labels (hereinafter referred to as "labels") of general-purpose permanent-magnet synchronous motors for industrial uses. It specifically includes:

(1) Single-speed enclosed self-cooled line-start three-phase permanent-magnet synchronous motors, with the voltage of 1,140 V or below, the 50 Hz three-phase AC power supply, the rated power of 0.55 kW~375 kW and 2, 4, 6, 8, 10, 12 and 16 poles in continuous duty (S1);

(2) Permanent-magnet synchronous motors for elevator, with the voltage 1,000 V or below, the variable-frequency power supply and the rated power of 0.55 kW~110 kW;

(3) Permanent-magnet synchronous motors driven by variable frequency equipment, with the voltage 1,000 V or below, the variable-frequency power supply and the rated power of 0.55 kW~90 kW;

(4) General-purpose permanent-magnet synchronous motors for re-manufacturing industry.

The motors to which the Rules are not applicable mainly include:

(1) Motors which cannot be tested separately due to entire embedment with other equipment like pump, fan, compressor, traction machine and reduction gearbox;

(2) Motors whose brakes are in motor shells (inside of fan cowl is referred to as outside of shell);

2 Pattern and specification of labels

2.1 The labels shall be 45 mm-long and 30 mm-wide color labels on blue and white background.

2.2 Label name: CHINA ENERGY LABEL (Chinese name: 中国能效标识), including the following contents (for line-start three-phase permanent-magnet synchronous motors):

(1) Name (or abbreviation) of the manufacturer;

(2) Specification and model;

- (3) Energy efficiency grade;
- (4) Efficiency (%);
- (5) Rated power (kW);
- (6) Number of poles;
- (7) Serial numbers of the mandatory national standards for energy efficiency on which the labels are based;
- (8) Energy efficiency information code;
- (9) Information on the "pace-setters" in energy efficiency (only aiming at the products listed in the catalogue of national "pace-setters" in energy efficiency).

For permanent-magnet synchronous motors and permanent-magnet synchronous motors driven by variable frequency equipment for elevators, the labels shall include the following contents:

- (1) Name (or abbreviation) of the manufacturer;
- (2) Specification and model;
- (3) Energy efficiency grade;
- (4) Efficiency (%);
- (5) Rated power (kW);
- (6) Rated speed (r/min);
- (7) Serial numbers of the mandatory national standards for energy efficiency on which the labels are based;
- (8) Energy efficiency information code;
- (9) Information on the "pace-setters" in energy efficiency (only aiming at the products listed in the catalogue of national "pace-setters" in energy efficiency).

2.3 See Annex 1 for pattern examples of the label, which is available on www.energylabelrecord.com.

3 Energy efficiency testing

3.1 The testing methods for such relevant energy efficiency performance parameters of products as efficiency shall be in accordance with current valid version of GB 30253 *Minimum allowable values of energy efficiency and energy efficiency grades for permanent magnet synchronous motors*.

3.2 See Annex 2 for the format of the *Testing Report on Energy Efficiency of Permanent Magnet Synchronous Motors* (hereinafter referred to as "the Testing Report"), which is available on www.energylabelrecord.com.

3.3 The manufacturers and importers may test the products by using the self-owned testing laboratories or authorizing the third-party inspection and testing organizations that have obtained accredited qualifications in accordance with the law, and determine the energy efficiency grades of the products in accordance with the mandatory national standards for energy efficiency.

The manufacturers or importers determining the energy efficiency grades by using the self-owned testing laboratories shall ensure that their testing laboratories have the capability of carrying out the testing according to the mandatory national standards for energy efficiency and also shall encourage them to obtain the accreditation from the national accreditation body.

3.4 The manufacturers or importers testing the products by using the self-owned testing laboratories shall provide the laboratory testing capacity evidentiary materials (including personnel capability, equipment capacity and testing management specifications of the laboratories); the manufacturers and importers with the testing laboratories having obtained the accreditation from the national accreditation body shall also provide the copy of corresponding accreditation certificate; the manufacturers and importers who entrust a third-party inspection and testing organization to carry out testing shall provide the copy of the inspection and testing organization's qualification accreditation certificate.

The authorized body shall verify the energy efficiency labels used by the manufacturers and importers and the testing reports on product energy efficiency.

4 Determination of label information

4.1 Manufacturer refers to the product brand owner or user who is legally responsible for the product quality.

4.2 Product specification and model shall be consistent with those indicated on the nameplate.

4.3 The energy efficiency grade, efficiency and other parameters related to product

Attached table

Information of product of each specification and model of the record unit

S.N.	Specification and model	Rated power (kW)	Number of poles	Rated speed (r/min)	Efficiency (%)	Frame No.	Flange No.	Rated voltage (V)	Rated frequency (Hz)	Insulation level	Fill in for the motor for elevator			Product weight (kg)	Overall dimension (mm×mm×mm)(L×W×H)	Others
											Load capacity (kg)	Elevator speed (m/s)	Motor torque (N·m)			

Recording Party:

Official seal:

Date: